

REMARKS

Favorable reconsideration, reexamination, and allowance of the present patent application are respectfully requested in view of the foregoing amendments and the following remarks. Claims 6-11 and 20 are pending in the application.

35 U.S.C. § 102 & 103 Rejections

Claims 6, 7 and 20 were rejected under 35 U.S.C. § 103 (a) as allegedly being unpatentable over Tan (U.S. Patent No. 6,075,576) in view of Sun et al. (U.S. Patent No. 5,969,764). Claims 8-11 were rejected under 35 U.S.C. § 103 (a) as allegedly being unpatentable over Tan in view of Sun in further view of Suzuki (U.S. Patent No. 6,031,575).

Regarding claim 6, the Examiner has once again alleged that the Tan et al. patent discloses a display speed information decoding means for decoding object display speed information from an encoded bit stream. However, as stated in our prior response, the VOP time increment is not equivalent to the claimed object display speed information. In contrast to the Examiner's interpretation, the Tan et al. patent discloses only a bit stream with a VOP time increment and time offset. These combined do not yield object display speed information. Instead, they merely disclose independent locations in time. Further, as previously mentioned in the prior response, in contrast to the present invention, the VOP time offset of the Tan et al. patent only provides information about a single time instant.

Further, the Tan et al. patent contains no reference to object display speed information or a display speed information decoding means. Since there is no display speed information decoding means taught or suggested by the Tan et al. patent, there is no control means for controlling reconstruction of the encoded image based on the decoded object display speed information taught or suggested by the *Tan et al.* patent. Therefore, the Tan et al. patent does not disclose a display speed information decoding means or a control means for controlling reconstruction of the encoded image as alleged by the Examiner.

Still further, the display speed information is not something that is determined from VOP increments themselves or a relation between the VOP increments. This information indicates the number of objects displayed per a unit time (see page 11, lines 3-7 of the present application). Thus, using a simple system, a plurality of objects combined in an image frame are displayed at respective proper display speeds, using a simple system (see page 20, lines 18-23 of the present application).

In summary, Tan discloses how a time information is decoded from modulo-time base and time-increment. In contrast, the present invention describes a display speed. As noted in the abstract of Tan "[t]he local time base is encoded in two parts. The first part has a modulo time base that indicates the specific interval in the reference time base and the second part has a time base increment relative to the reference time." Therefore, the Examiner's statement that the speed is a reciprocal of an increment is misplaced since time-increment indicates a period of time that elapses since a reference time, as revealed in the above-noted passage.

Tan discloses that, for representation of a desired image in a VOP, time information (modulo-time base and time-increment) are decoded for each VOP. Representation time is determined based on the result of decoding, which is a significantly complex step to implement. In contrast, by employing the claimed invention, it is possible to calculate the number of frames preceding a desired frame when the display speed is fixed. For example, assuming that the display speed is 10fps and a VOP that occurs one second after the current time is to be displayed, it is determined that a desired VOP occurs in the tenth frame. Accordingly, display of a desired VOP only requires a simple process that does not involve the decoding step.

The Examiner has correctly noted at least one of the deficiencies of the Tan et al. patent, that the Tan et al. patent does not disclose the display speed information indicating a number of objects displayed per unit time. The Examiner has tried to remedy this deficiency by combining the Tan et al. patent with Sun et al. patent. The Examiner alleges that the Sun et al. patent discloses this feature and that it would have been obvious for one of ordinary skill in the art at the time the invention was disclosed to combine these references to arrive at Applicant's claimed combinations. Applicants respectfully traverse both these allegations

Regarding the allegation that the Sun et al. patent discloses the claimed feature of the display speed information indicating a number of objects displayed per a unit time, Applicants respectfully disagree. Applicants respectfully submit that no portion of the Sun et al. patent discloses display speed information indicating a number of objects displayed per a unit time. Instead, the Sun et al. patent discloses a method for

encoding video objects based on a buffer level to maintain a constant bit rate output, as quoted from the Abstract (with emphasis added):

A method adaptively encodes a sequence of frames including video objects to provide a compressed video signal. The **encoding is via a buffer having a variable input rate and a constant output rate**. The encoding uses a discrete cosine transform to produce coefficients that are quantized to generate image-representative code bits at a variable rate and texture, and motion and shape information for each video object stored in the buffer. The **content of the buffer is restricted by adjusting quantization parameters with respect to a reference value and a quadratic rate distortion model to increase or decrease the number of bits stored in the buffer**. Furthermore, the target number of bits for encoding each video object is estimated in accordance with a function of relative motion and size. **The encoding bit rate is set to avoid buffer overflow.**

As clearly described above, the encoding bit rate is adjusted to avoid overflowing the buffer. The Sun et al. patent does not discuss either a decoder or display speed information indicating a number of objects displayed per a unit time. The Examiner has alleged that this is shown in Tables 5 and 6. However, the bit rates of the various test videos of Tables 5 and 6 correspond to the actual video encoding rates of the videos themselves. For example, Table 2 shows the following data:

ID	Sequence	Bit Rate	Frame Rate	Format
1	Akiyo, Container	10	7.5	QCIF
3	News	48	7.5	CIF

Therefore, the fact that the various test videos bit rates are different as encoded does not teach display speed information indicating a number of objects displayed per a unit time. Correspondingly, it is to be expected that the variable input/constant output

encoder would correlate to the various input test videos bit rates (i.e., the Akiyo, Container-1 video approaches 10 (9.86) and News-3 video approaches 48 (47.68), as shown in Table 5). Likewise, the "high bit-rate" simulations in Table 4 correspond to the different bit rates for the different test videos in Table 6. Accordingly, none of these teach display speed information indicating a number of objects displayed per a unit time, as alleged by the Examiner.

As stated in MPEP § 2143.01, to establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 165 USPQ 494, 496 (CCPA 1970). Neither Tan et al., Sun et al. or the combination of these references discloses the features of Applicants' claimed combinations as noted above. Therefore, these references do not render Applicants' claimed combinations obvious as alleged by the Examiner. Accordingly, Applicants respectfully request reconsideration and withdrawal of this rejection.

Additionally, the teachings of the Suzuki et al. patent do not remedy the deficiencies of Tan et al. in view of Sun et al. as noted above. Therefore, the combination of the Tan et al., Sun et al. and Suzuki et al. documents do not render the Applicants' claimed combinations obvious. Further, Applicants submit that one of ordinary skill in the art would not have been motivated to modify the systems of Tan et al. Sun et al. and Suzuki et al. to arrive at Applicants' claimed combinations absent impermissible hindsight reference to Applicants' specification.

For at least the foregoing reasons, it is respectfully submitted that claim 6 is distinguishable over the applied art. The remaining dependent claims 7-11 are allowable at least by virtue of their dependency on the above-identified independent claim. Moreover, these claims recite additional subject matter, which is not suggested by the documents taken either alone or in combination.

Independent claim 20 recites related subject matter to the above-identified independent claim 6 and is therefore allowable for reasons similar to those given above.

VERIFIED TRANSLATION

Finally, even if the Examiner is not convinced by the foregoing arguments, Applicants submit that the rejection relying on the Tan patent is improper because the present application is entitled to the right of priority of International Patent Application No. PCT/JP97/03785 under 35 U.S.C. § 119. The present application is therefore entitled to the benefit of the filing date of this patent application (10/20/97), which precedes the date that the effective filing date of the Tan patent in the U.S. (2/26/98). Accordingly, Applicants respectfully submit the Tan patent is not prior art with respect to the present application. Therefore, any rejection relying on the Tan patent is invalid.

Applicants have enclosed a verified English translation of the International Patent Application No. PCT/JP97/03785, to which the present application claims a right of priority.

CONCLUSION

All objections and rejections raised in the Office Action having been addressed, it is respectfully submitted that the present application is in condition for allowance and such allowance is respectfully solicited. Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Mark E. Olds, Reg. No. 46,570, at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

Attached hereto is a marked-up version of the changes made to the application by this Response.


If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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1163-0268P

Attachment: Version with Markings to Show Changes Made
Verified English translation of PCT/JP97/03785

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

Please amend the paragraph starting on page 2, line 12 as follows:

Still another object of the present invention is to provide an image encoding and an image decoding device which perform required image processing with only limited amounts of information necessary therefor.